2. (Amended) [An] The electro-optic device as claimed in claim 1, wherein [in which] the spacing between adjacent doped areas is in the range of 250 to 300 microns.

3. (Amended) [An] The electro-optic device as claimed in claim 1 , wherein [or 2 in which] each of the doped areas has a length in a direction along the waveguide of at least 1 mm.

4. (Amended) [An] The electro-optic device as claimed in claim 1, [2 or 3 in which] wherein each of the doped areas has a length in a direction along the waveguide of 10 mm or less.

5. (Amended) An electro-optic device as claimed in [any preceding] claim 1, wherein [in which] the doped regions each comprise at least four doped areas spaced part from each other in a direction along the length of the waveguide.

6. (Amended) An electro-optic device as claimed in [any preceding] claim 1, wherein [in which] the doped regions form p-i-n diodes across the waveguide.

7. (Amended) An electro-optic device as claimed in claim 6, wherein [in which] the doped areas are arranged in an alternating sequence of p-doped areas and n-doped areas along the length of the waveguide.

8. (Amended) An electro-optic device as claimed in [any preceding] claim 1, wherein [in which] the waveguide [is formed of] comprises silicon.

9. (Amended) An electro-optic device as claimed in claim 8, wherein [in which] the waveguide is a silicon rib waveguide.

10. (Amended) [An] The electro-optic device as claimed in [any preceding] claim 1, wherein [in which] the two doped regions are provided on opposite sides of the waveguide.

11. (Amended) [An] The electro-optic device as claimed in claim [9 and] 10, wherein [in which] the doped regions are provided in areas of silicon adjacent the rib waveguide.

12. (Amended) [An] The electro-optic device as claimed in [any preceding] claim 1, wherein [in which] the waveguide has a substantially straight portion and the doped regions are arranged so that the density of charge carriers can be altered within said substantially straight portion of the waveguide.

13. (Amended) [An] The electro-optic device as claimed in [any preceding] claim 1, wherein [in which] the doped areas are electrically connected so [the] a plurality of diodes formed thereby are connected in series.

14. (Amended) [An] The electro-optic device as claimed in [any preceding] claim 13, wherein [in which] electrical connections to and/or between the doped areas are provided by [metallisations] electrical contacts.

15. (Amended) [An] The electro-optic device as claimed in [any preceding] claim 1, wherein the device is used as [forming] an adjustable attenuator.

16. (Amended) [An] The electro-optic device as claimed in [any preceding] claim 1, wherein the device is used as [forming] a phase modulator.

17. (Amended) An electro-optic device comprising:

a substrate; and

an integrated optical waveguide extending across the substrate, at least one portion of the waveguide being curved, two doped regions being provided such that an electrical signal can be applied across the doped regions to alter the density of charge carriers within the curved portion of the waveguide.

18. (Amended) [An] The electro-optic device as claimed in claim 17, wherein [in which] the doped regions each comprise a plurality of doped areas spaced apart from each other along the length of the waveguide.

19. (Amended) [An] The electro-optic device as claimed in claim 17, wherein [or 18 in which] an n-doped region is provided adjacent an outer side of the curved portion of the waveguide and a p-doped region adjacent an inner side of the curved portion.

20. (Amended) [An] The electro-optic device as claimed in claim 19, wherein [in which] the waveguide comprises a series of two or more curved portions curving in alternating directions, each having an n-doped region adjacent the outer side of the curved

portions and a p-doped region of the inner side thereof so as to form a series of diodes of alternating polarity along the length of the waveguide.

Clean Set of Amended Claims

A2 sub B2

1. (Amended) An electro-optic device comprising:

a substrate; and

an integrated optical waveguide extending across the substrate, two doped regions being provided such that an electrical signal can be applied across the doped regions to alter the density of charge carriers within the waveguide, the doped regions each comprising a plurality of doped areas spaced apart from each other along the length of the waveguide.

2. (Amended) The electro-optic device as claimed in claim 1, wherein the spacing between adjacent doped areas is in the range of 250 to 300 microns.

3. (Amended) The electro-optic device as claimed in claim 1 , wherein each of the doped areas has a length in a direction along the waveguide of at least 1 mm.

4. (Amended) The electro-optic device as claimed in claim 1, wherein each of the doped areas has a length in a direction along the waveguide of 10 mm or less.

A2 contd

B2

5. (Amended) An electro-optic device as claimed in claim 1, wherein the doped regions each comprise at least four doped areas spaced part from each other in a direction along the length of the waveguide.

6. (Amended) An electro-optic device as claimed in claim 1, wherein the doped regions form p-i-n diodes across the waveguide.

7. (Amended) An electro-optic device as claimed in claim 6, wherein the doped areas are arranged in an alternating sequence of p-doped areas and n-doped areas along the length of the waveguide.

8. (Amended) An electro-optic device as claimed in claim 1, wherein the waveguide comprises silicon.

9. (Amended) An electro-optic device as claimed in claim 8, wherein the waveguide is a silicon rib waveguide.

10. (Amended) The electro-optic device as claimed in claim 1, wherein the two doped regions are provided on opposite sides of the waveguide.

A2 contd

11. (Amended) The electro-optic device as claimed in claim 10, wherein the doped regions are provided in areas of silicon adjacent the rib waveguide.

B

12. (Amended) The electro-optic device as claimed in claim 1, wherein the waveguide has a substantially straight portion and the doped regions are arranged so that the density of charge carriers can be altered within said substantially straight portion of the waveguide.

13. (Amended) The electro-optic device as claimed in claim 1, wherein the doped areas are electrically connected so a plurality of diodes formed thereby are connected in series.

14. (Amended) The electro-optic device as claimed in claim 13, wherein electrical connections to and/or between the doped areas are provided by electrical contacts.

15. (Amended) The electro-optic device as claimed in claim 1, wherein the device is used as an adjustable attenuator.

A2 contd

16. (Amended) The electro-optic device as claimed in claim 1, wherein the device is used as a phase modulator.

B2

17. (Amended) An electro-optic device comprising:

a substrate; and

an integrated optical waveguide extending across the substrate, at least one portion of the waveguide being curved, two doped regions being provided such that an electrical signal can be applied across the doped regions to alter the density of charge carriers within the curved portion of the waveguide.

18. (Amended) The electro-optic device as claimed in claim 17, wherein the doped regions each comprise a plurality of doped areas spaced apart from each other along the length of the waveguide.

19. (Amended) The electro-optic device as claimed in claim 17, wherein an n-doped region is provided adjacent an outer side of the curved portion of the waveguide and a p-doped region adjacent an inner side of the curved portion.

20. (Amended) The electro-optic device as claimed in claim 19, wherein the waveguide comprises a series of two or more curved portions curving in alternating directions, each having an n-doped region adjacent the outer side of the curved portions and a p-doped region of the inner side thereof so as to form a series of diodes of alternating polarity along the length of the waveguide.